

WHAT IS CLAIMED IS:

1. A method of modifying a heart valve of a patient, comprising:
advancing a catheter through the patient's vasculature into the heart from a
vascular access point remote from the heart, the catheter having a structure releasably
coupled thereto;

5 deploying the structure from the catheter on or near an annulus of the heart valve,
the structure adapted to modify the annulus so as to reduce regurgitation in the heart
valve; and

 in combination with deploying the structure from the catheter on or near the
annulus of the heart valve, holding leaflets of the heart valve together so as to reduce
10 regurgitation in the heart valve.

2. A method as in claim 1, wherein the structure comprises a ring that at least
partially surrounds the annulus.

15 3. A method as in claim 1, wherein modifying the annulus comprises
circumferentially shortening the annulus.

4. A method as in claim 1, wherein deploying the structure comprises
deploying the structure on an atrial side of the annulus.

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5. A method as in claim 1, wherein modifying the annulus comprises
tightening the annulus.

25 6. A method as defined in claim 1, wherein holding the leaflets of the valve
together comprises permanently attaching opposed points on or along the valve leaflets
together.

30 7. A method as defined in claim 1, wherein holding the leaflets of the valve
together comprises suturing, clipping, stapling, riveting, gluing, or fusing opposed points
on or along the valve leaflets together.

8. A method as defined in claim 1, wherein holding the leaflets of the valve
together is accomplished by linking opposed chordae of the valve leaflets together.

9. A method as defined in claim 8, wherein linking comprises suturing, capturing, fusing, clipping, or gluing the opposed chordae.

5 10. A method as defined in claim 1, wherein advancing the catheter comprises advancing the catheter across an interatrial septum of the heart.

11. A method of modifying a heart valve of a patient, comprising:
advancing a catheter through the patient's vasculature into the heart from a
10 vascular access point remote from the heart, the catheter having an annuloplasty device releasably coupled thereto;
implanting the annuloplasty device from the catheter at the heart valve to modify an annulus of the heart valve and reduce regurgitation in the heart valve;
in combination with implanting an annuloplasty device from the catheter at the
15 heart valve, modifying a spatial relationship between a first valve leaflet and a second valve leaflet of the heart valve so as to reduce regurgitation in the heart valve.

12. A method as defined in claim 11, wherein the spatial relationship between the first and second valve leaflets is modified by attaching opposed points on or along the
20 valve leaflets together.

13. A method as defined in claim 11, wherein the spatial relationship between the first and second valve leaflets is modified by suturing, clipping, stapling, riveting, gluing, or fusing opposed points on or along the valve leaflets together.

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14. A method as defined in claim 11, wherein the spatial relationship between the first and second valve leaflets is modified by linking opposed chordae of the valve leaflets together to cause the valve leaflets to move toward one another.

30 15. A method as defined in claim 14, wherein linking comprises suturing, capturing, fusing, clipping, or gluing the opposed chordae.

16. A method as defined in claim 11, wherein the spatial relationship between the first and second valve leaflets is modified by drawing opposed points of papillary muscles together to cause the valve leaflets to move toward one another.

5 17. A method as in claim 11, wherein modifying the annulus comprises circumferentially shortening the annulus.

18. A method as in claim 11, wherein the annuloplasty device is deployed on an atrial side of the annulus.

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19. A method as in claim 11, wherein modifying the annulus comprises tightening the annulus.

20. A method as defined in claim 11, wherein advancing the catheter
15 comprises advancing the catheter across an interatrial septum of the heart.

21. A method of modifying a heart valve of a patient, comprising:
effecting a geometric change in an annulus of the heart valve so as to reduce
regurgitation in the heart valve; and
20 in combination with effecting a geometric change in an annulus of the heart valve,
coapting leaflets of the heart valve so as to reduce regurgitation in the heart valve.

22. A method as defined in claim 21, further comprising advancing a catheter
through the patient's vasculature into the heart from a vascular access point remote from
25 the heart, the catheter having an annuloplasty device releasably coupled thereto, and
wherein effecting a geometric change in the annulus comprises implanting the
annuloplasty device from the catheter at the heart valve.

23. A method as in claim 21, wherein effecting a geometric change in the
30 annulus comprises circumferentially shortening the annulus.

24. A method as in claim 22, wherein the annuloplasty device is deployed on an atrial side of the annulus.

25. A method as in claim 21, wherein effecting a geometric change in the annulus comprises tightening the annulus.

26. A method as defined in claim 21, wherein coapting the leaflets comprises
5 suturing, clipping, stapling, riveting, gluing, or fusing opposed points on or along the valve leaflets together.

27. A method of modifying a heart valve of a patient, comprising:
advancing a catheter through the patient's vasculature into the heart from a
10 vascular access point remote from the heart, the catheter having an annuloplasty device releasably coupled thereto;
implanting the annuloplasty device at the heart valve to modify an annulus of the heart valve and reduce regurgitation in the heart valve;
in combination with implanting an annuloplasty device at the heart valve, holding
15 leaflets of the heart valve together at one or more adjacent locations in a manner that reduces regurgitation in the valve.

28. A method as in claim 27, wherein the annuloplasty device comprises a ring
that at least partially surrounds the annulus.
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29. A method as in claim 27, wherein modifying the annulus comprises circumferentially shortening the annulus.

30. A method as in claim 27, wherein deploying the annuloplasty device
25 comprises deploying the structure on an atrial side of the annulus.

31. A method as in claim 27, wherein modifying the annulus comprises tightening the annulus.

30 32. A method as defined in claim 27, wherein holding the leaflets of the valve together comprises permanently attaching opposed points on or along the valve leaflets together.

33. A method as defined in claim 27, wherein holding the leaflets of the valve together comprises suturing, clipping, stapling, riveting, gluing, or fusing opposed points on or along the valve leaflets together.

5 34. A method as defined in claim 27, wherein holding the leaflets of the valve together is accomplished by linking opposed chordae of the valve leaflets together.

35. A method as defined in claim 34, wherein linking comprises suturing, capturing, fusing, clipping, or gluing the opposed chordae.